



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/776,343	02/02/2001	Fank Ansorge	10537/86	9082
26646	7590	06/08/2004	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			SONG, HOON K	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/776,343	ANSORGE ET AL.	
	Examiner	Art Unit	
	Hoon Song	2882	

-- Th MAILING DATE of this communication app ars on th cover sheet with th correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 23-25 and 32-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 23-25, 32-38 and 40-43 is/are rejected.
- 7) ☒ Claim(s) 8 and 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 6-7, 23, 32-33, 37-38, 40 and 43 are rejected under 35 U.S.C. 102(e) as being anticipated by Hokari (US 6285400B1).

Regarding claims 1, 23, 32, 40 and 43, Hokari teaches a detector with focal surface comprising:

At least one detector formed of at least one solid state element (43) and configured to record an image, the at least one detector being flexible, at least one of the focal surface and the at least one detector having a curvature for recording a curved image plane (figure 5, column 5 line 20+ and column 6 line 9+);

A detector carrier (41 and 45) configured to hold the at least one detector; and

A flexible carrier substrate (42), the at least one solid-state element being flexible, thinned and connected to the flexible carrier substrate (column 6 line 14+).

Regarding claims 2 and 33, Hokari teaches that the at least one detector includes a thinned silicon wafer (CCD detector, figure 1), the at least one detector being

arranged on the focal surface in a curved manner (when the detector is deformed by the actuator, column 6 line 9+).

Regarding claims 6 and 37, Hokari teaches that the at least one detector includes at least one of a CMOS line detector, CCD line detector, a solid state line detector and a two-dimensional array detector (figure 1, column 1 line 22+).

Regarding claims 7 and 38, Hokari teaches that an actuator (45) configured to vary the curvature (figure 5, dotted line).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Krivanek et al. (US 5818035).

Regarding claim 23, Krivanek teaches a detector or an opto-electronic imaging system (figure 2) for imaging recording comprising:

A thinned, flexible solid state element (43, figure 2, column 5 line 33+, the detector is bent by pressing support plate (50) with curvature and optical coupling device (42)); and

A flexible carrier substrate (43b), the solid-state element being connected to the flexible carrier substrate (figure 2);

Wherein the detector is flexible.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims ~~8~~³ and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hokari in view of Taravade (US 6285035B1)

Regarding claims 3 and 34, Hokari fails to teach that the at least one detector is formed using an auxiliary carrier connected to the at least one solid-state element for thinning the at least one solid-state element, the auxiliary carrier being at least one of removable and removed after the at least one solid-state element is thinned.

Taravade teaches a CMP (chemical mechanical polishing) apparatus having an auxiliary carrier (54) connected to the at least one solid-state element (10) for thinning the at least one solid-state element, the auxiliary carrier being at least one of removable and removed after the at least one solid-state element is thinned (after finishing CMP).

It would have been obvious to one of ordinary skill in the art at the time of the invention to prepare the detector of Hokari using Taravade's CMP apparatus, since the thinning apparatus would provide more accurate thickness for preparing the detector.

Claims 4-5, 24-25 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hokari in view of Taravade (US 6285035B1)

Regarding claims 4-5 and 35-36, Hokari teaches that the at least one solid-state element has a maximum thickness of approximately 20 micron or 10 micron.

Iwasaki teaches a image pickup apparatus having very thin thickness (column 3 line 52+).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the solid state element of Hokari with the very thin thickness as taught by Iwasaki, since the thickness of Iwasaki would provide better flexibility shape characteristic and freely deformable characteristic (column 3 line 48+).

Regarding claims 24 and 25, Hokari teaches that each that the solid-state element has length to width ratio of approximately 20 to 60 (column 3 line 9+).

Allowable Subject Matter

Regarding claims 8 and 39, Hokari fails to teach a temperature control system configured to maintain the at least one detector within a predefined temperature range, the detector carrier at least one of including at least one channel and being coupled to at least one peltier element as claimed in dependent claims 8 and 39.

Response to Arguments

Applicant's arguments with respect to claims 1-8,23-25 and 32-43 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HKS

5126104
HKS

Craig E Church

Craig E. Church
Primary Examiner